

FIG. 1

09372443, 060404  
107090, 27422860

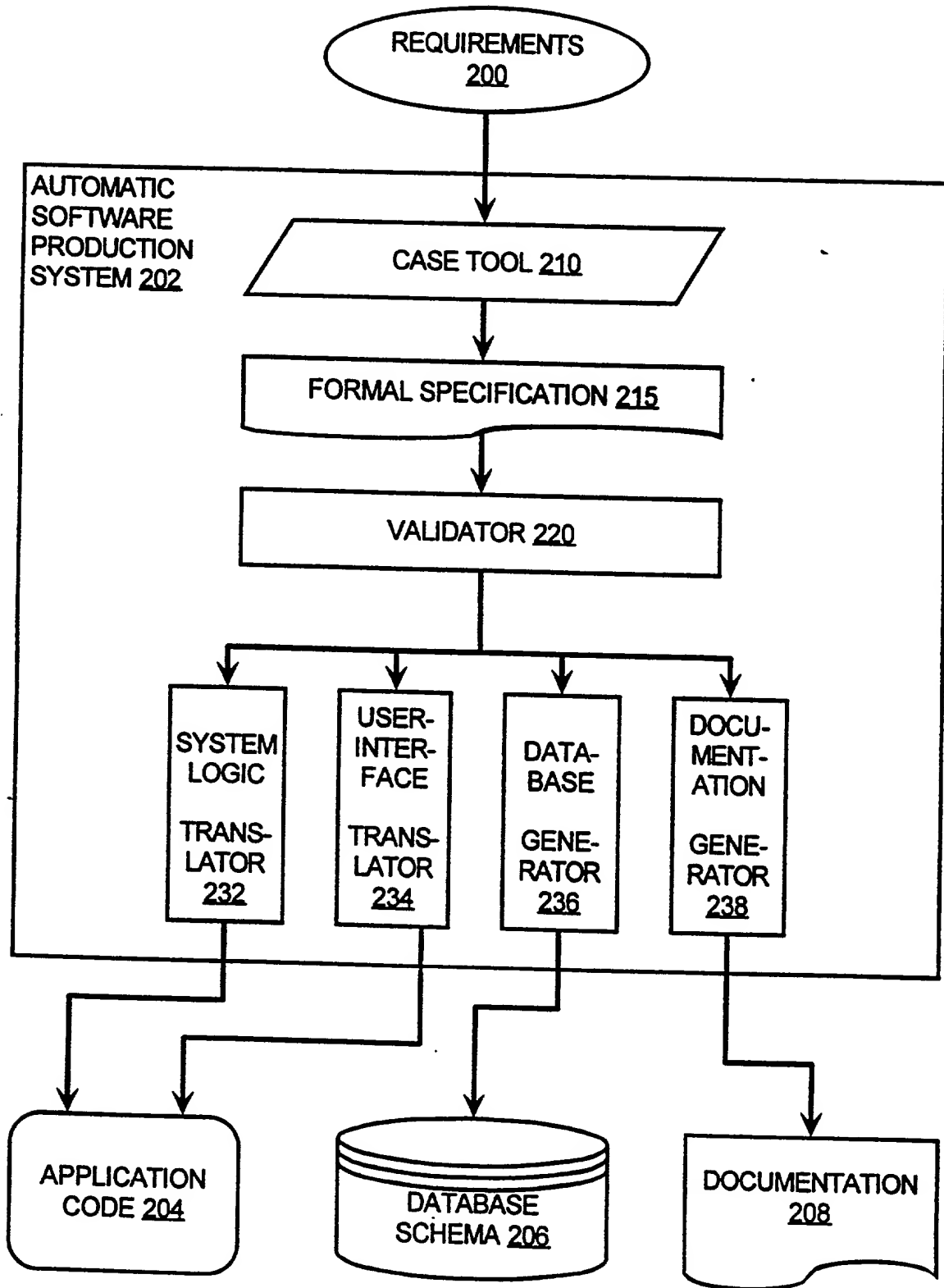


FIG. 2

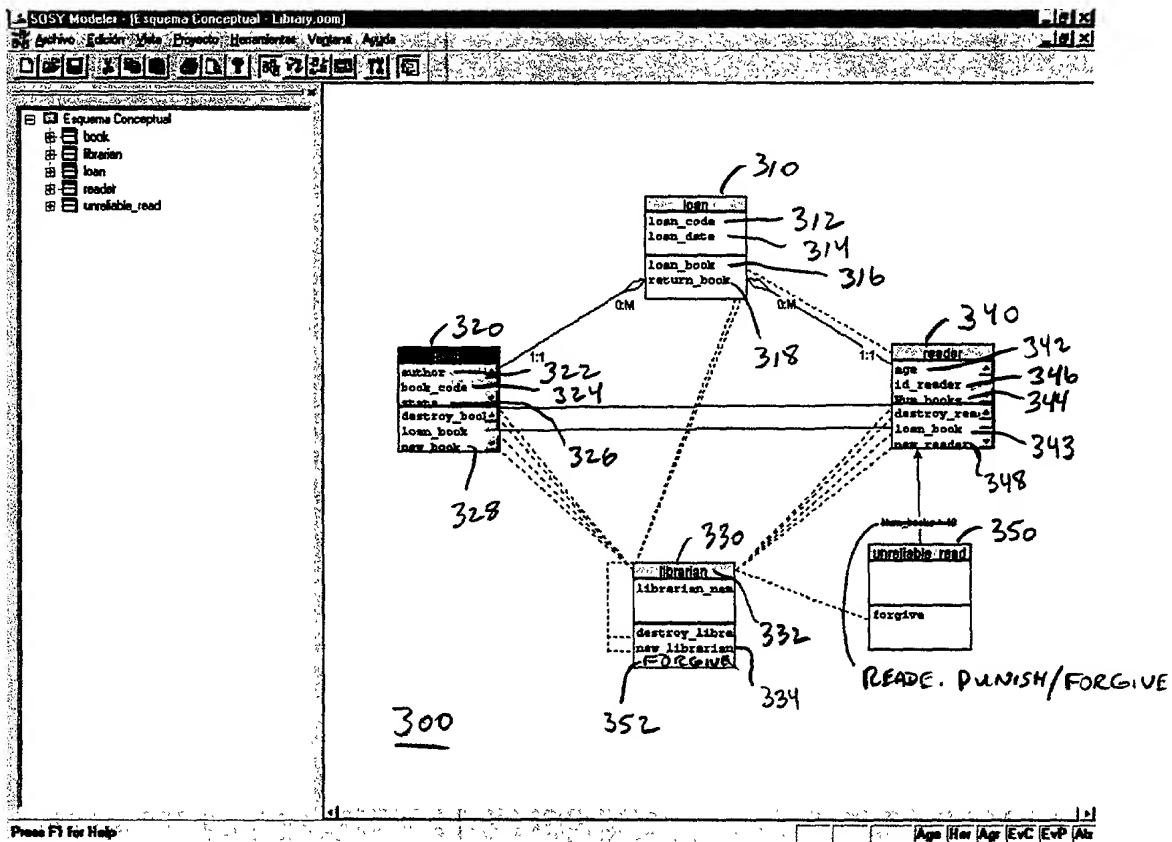


FIG. 3

SOSY Modeler - [Diagrama de Transición de Estados - Library.oom]

Archivo Edición Proyecto Vista Herramientas

Class: book

```
stateDiagram-v2
    [*] --> book0 : [*]new_book
    book0 --> [*] : [*]loan_book F state = "available"
    book0 --> end : [*]destroy_book
    end --> book0 : [*]return_book F state = "lent"
```

Press F1 for Help

FIG. 4A

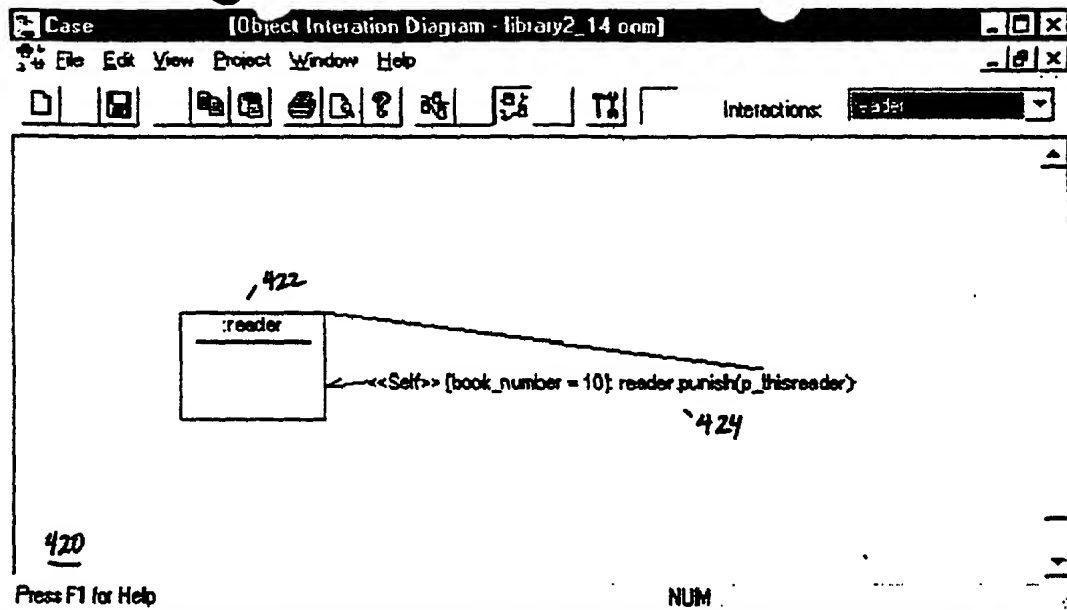


FIG. 4B

Functional Model

Class: reader Attribute: book\_number

Event: loan\_book Effect: + 1 Condition:

return\_book - 1

Category: ☒ Purpose ☐ State-independent ☐ Discrete-domain

Valuation Details:

Event: loan\_book Action type: Increment

Valuation condition:

Effect of the event:

1

FIG. 5

09872413-060404

FLOWCHART OF THE FUNCTIONS THAT ALL SPECIES OF SYSTEM LOGIC TRANSLATORS WILL PERFORM

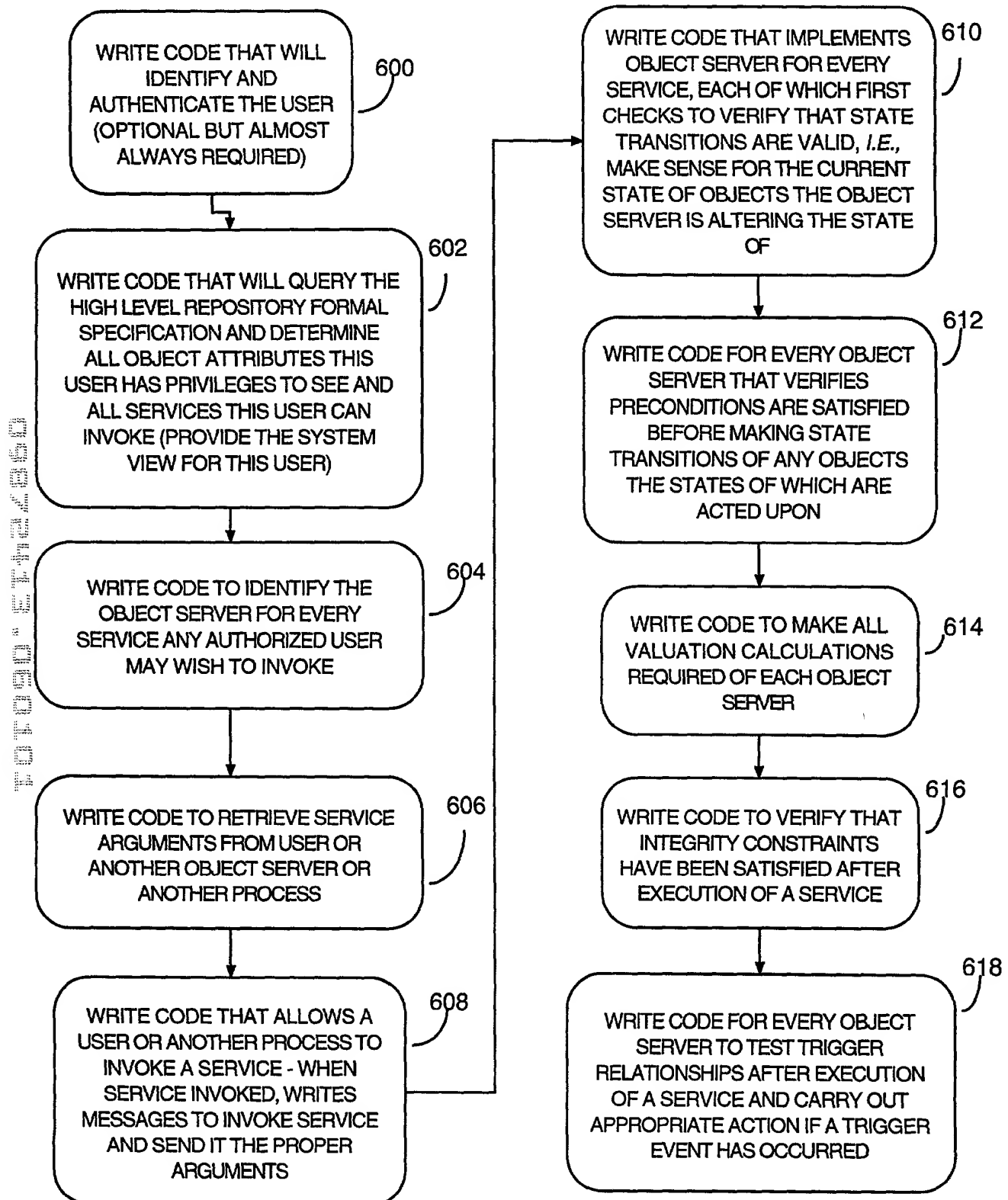


FIG. 6

FLOWCHART OF THE FUNCTIONS THAT ALL SPECIES IN THE USER INTERFACE  
TRANSLATOR SUBGENUS WILL PERFORM

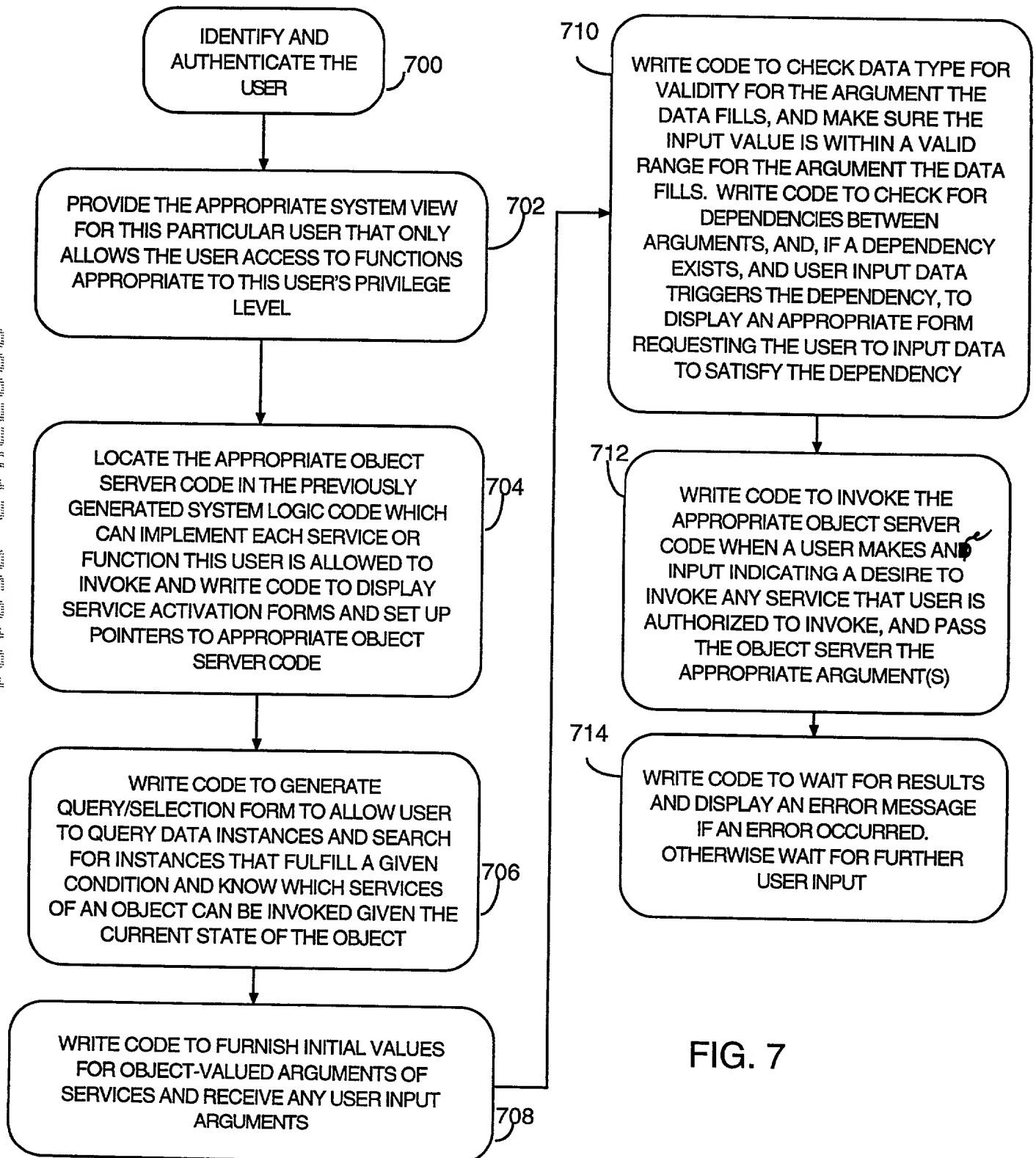


FIG. 7

FLOWCHART OF THE FUNCTIONS THAT ALL SPECIES IN THE DATABASE GENERATOR  
TRANSLATOR SUBGENUS WILL PERFORM

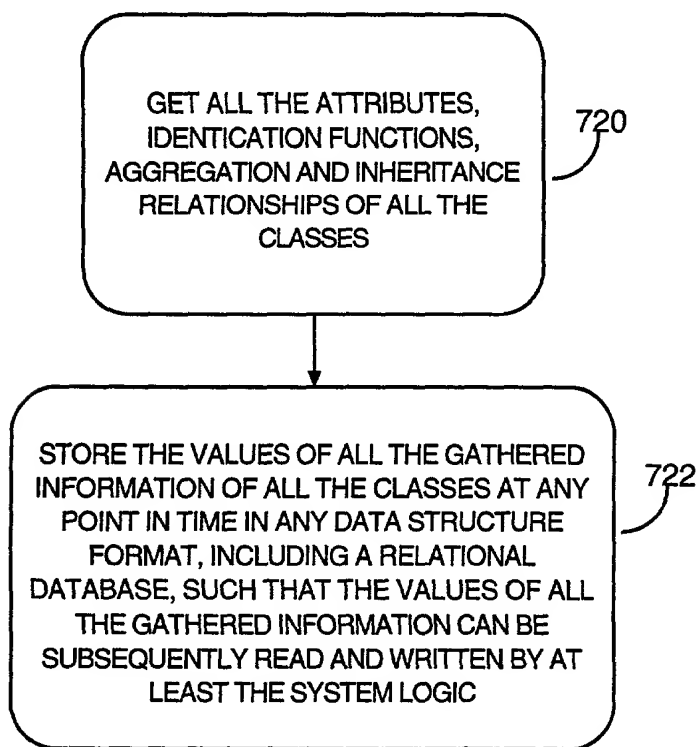
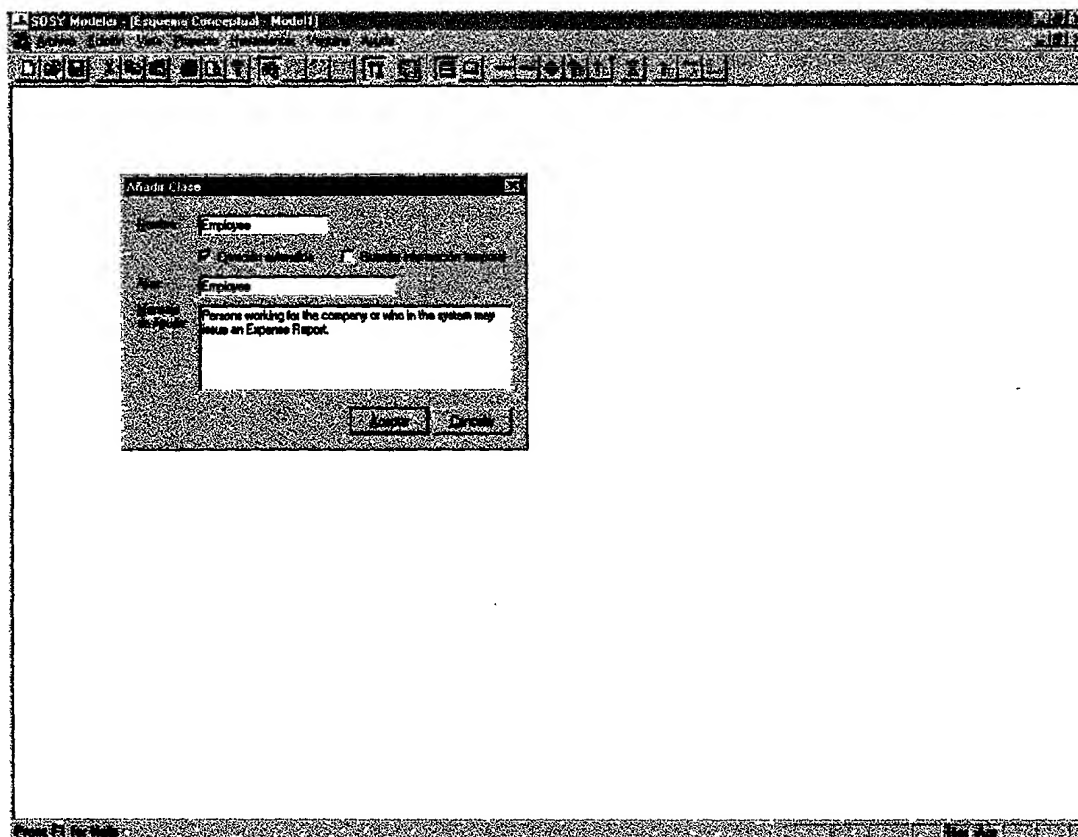


FIG. 8

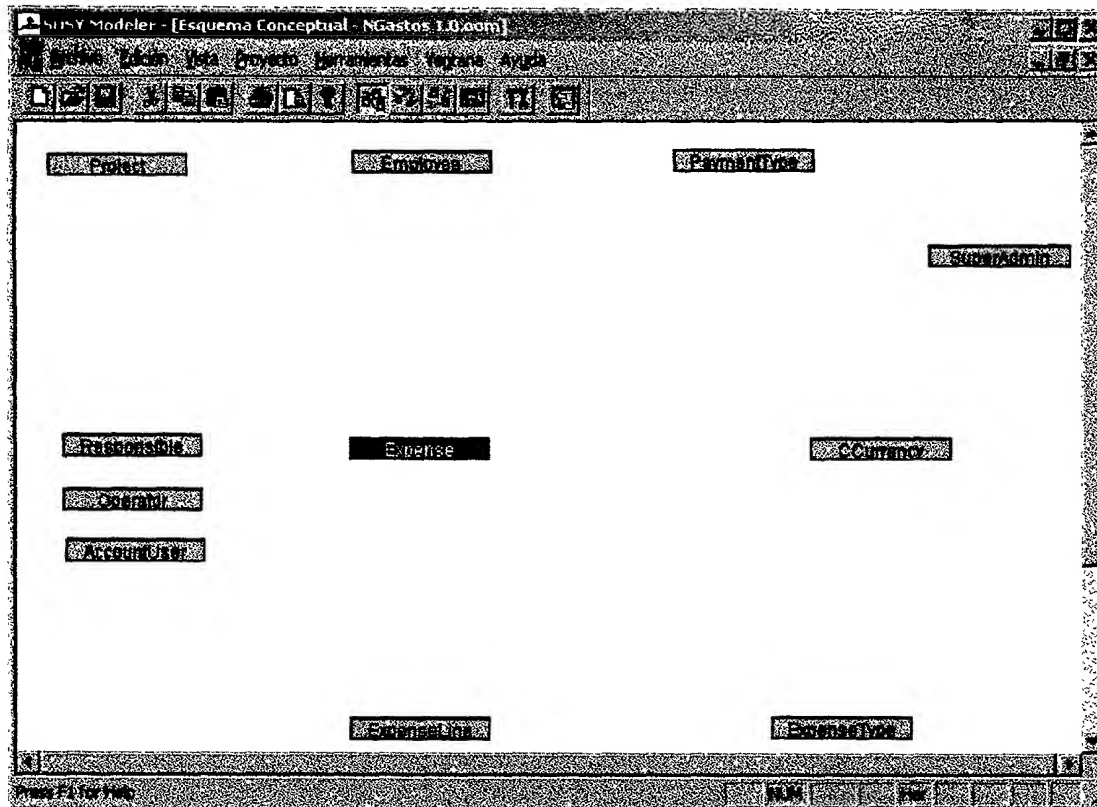




class creation dialog

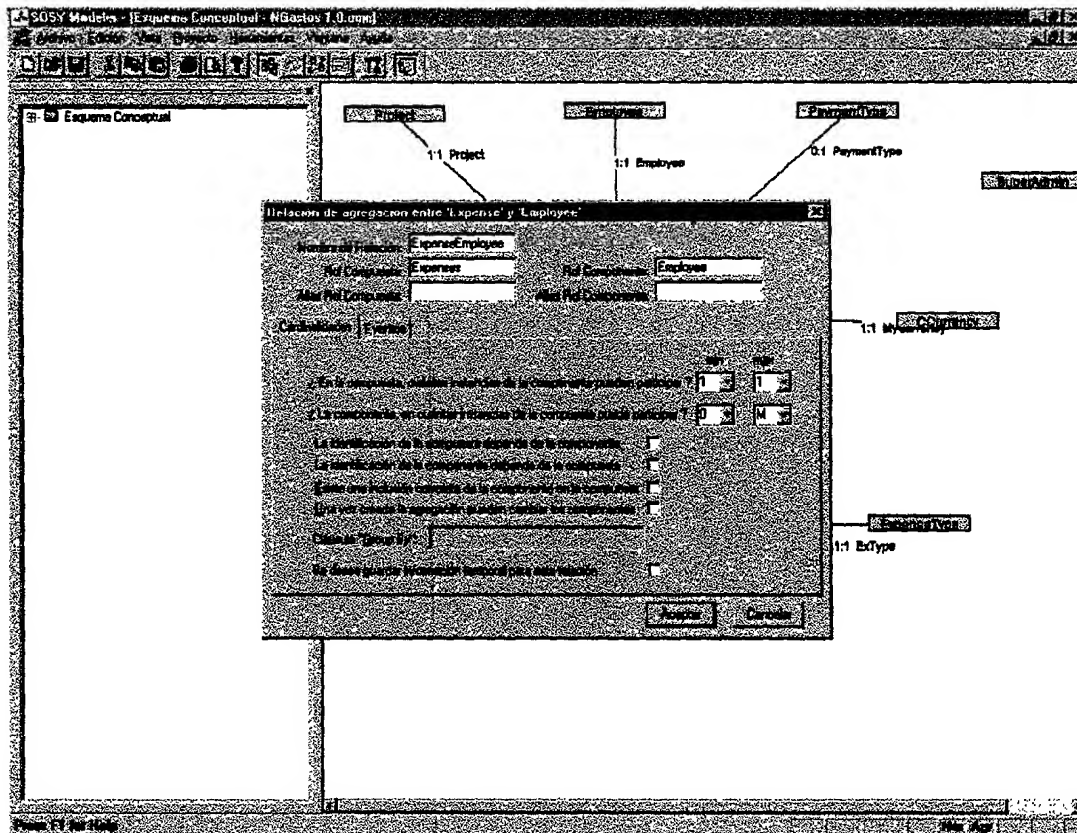
FIG. 9A

09/24/2004 10:04:01



DIALOG SHOWING ALL CLASSES NEEDED & CREATED  
IN EXPENSE MANAGEMENT SYSTEM

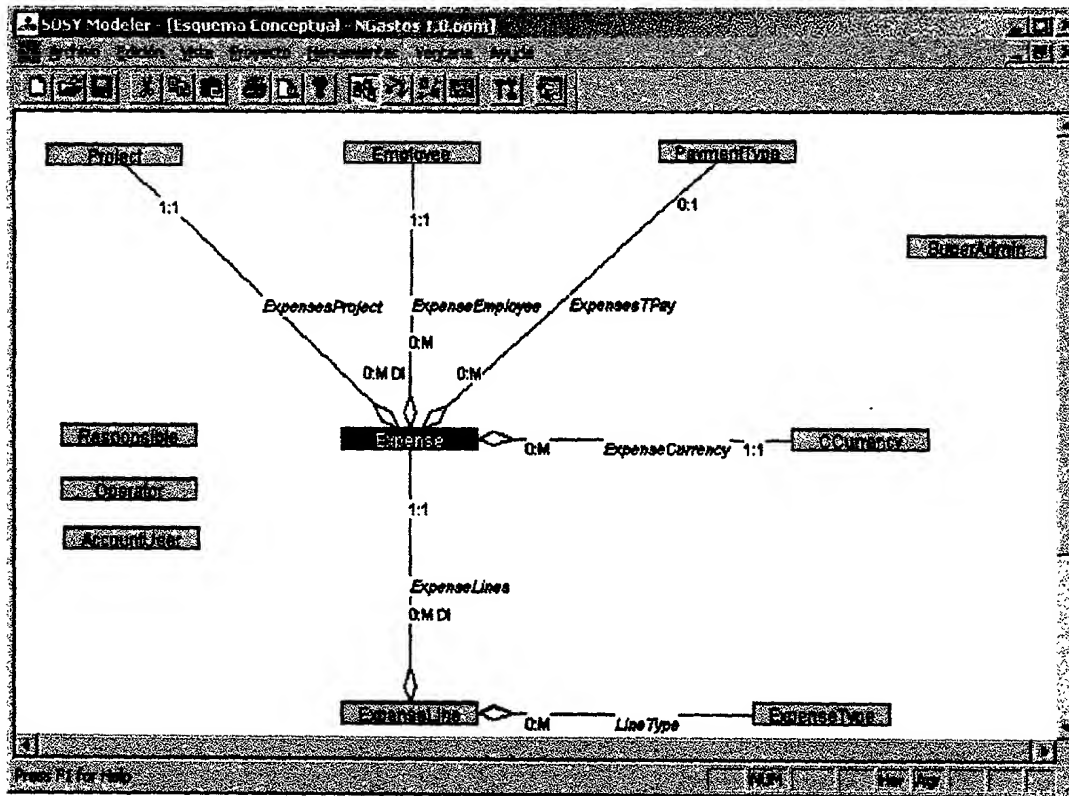
FIG. 9B



dialog to create and modify relationships between classes

FIG. 90

figure shows relationships found with all their properties indicated.



GRAPHIC DIALOG TO CREATE  
RELATIONSHIPS BETWEEN CLASSES  
AND GRAPHICALLY SHOW THE  
RELATIONSHIPS SO CREATED  
FIG. 10

Nombre	Tipo atributo	Tipo dato	N	Tamaño	Valor default	Permitir nulos	Nulos	Accion
PresentDate	Constante	Date			today()	Si	No	Añadir
Status	Variable	Int			0	No	No	Modificar
Cause	Variable	String	255			Si	No	Borrar
AuthoDate	Variable	Date			NULL	No	Si	
AuthoComments	Variable	String	255		NULL	No	Si	
PaymentDate	Variable	Date			NULL	No	Si	
PayComments	Variable	String	255			No	Si	
TotExpenses	Derivado	Real						
TotExpensesCur	Derivado	Real						
Advances	Variable	Real			0	Si	No	
AdvancesCur	Derivado	Real						
Exchange	Variable	Real				No	Si	
Balance	Derivado	Real						
BalanceCur	Derivado	Real						

Nombre:  Tipo Atributo:  Tipo Dato:

☐ Informacion Temporal

Acc:

Observaciones:

Clase:

Aceptar Cancelar

Clase

Abolir

Services

Derivaciones

Restricciones

Agentes

Transacciones

Relaciones

Generalidades

Artículo

Balance

Formulas de Derivación

Condición	Fórmula	<div>Añadir</div> <div>Modificar</div> <div>Eliminar</div>
	TotalExpense - Advances	

Condición

Fórmula

Observaciones

Clase

Expense

Aceptar

Cancelar

FIG. 11

Expense

Overview of Transactions

Services

Name	Characteristics
newexpense	New
deleteexpense	Destroy
close	
authorize	
approve	
pay	
rejectauth	
rejectpayment	
InsPaymentType	Shared with PaymentType
BoPaymentType	Shared with PaymentType
DELETEALL	Tran
TPAY	Tran

Performance

Name	Type/disk
o_ThisExpense	Expense
o_Cause	String
o_Advances	Real
o_Exchange	Real

SERVICES OF CLASS "EXPENSE"  
FIG. 12

Next figure shows the formula for the "DELETEALL" transaction:

The screenshot shows a software window titled "Close" with a menu bar containing "Altabase", "Service", "Derivations", "Restrictions", "Agents", "Transactions", "Relations", and "Generalized". The "Transactions" menu is selected, and a dropdown shows "DELETEALL". Below the menu bar, there is a "Formula" section with a text area containing the formula: "FOR ALL Lines DO Lines.deleteLine( Lines ). deleteExpense( THIS )". Below the formula section, there is an "Account" section with a dropdown set to "Expense". To the right of the account dropdown is a "Delete" button. Below the account dropdown, there is an "Agent" section with a dropdown set to "approve". To the right of the agent dropdown is a "Restriction" dropdown set to "p\_thisExpense". Below the restriction dropdown is a "Restriction" section with a dropdown set to "Expense". To the right of the restriction dropdown is a checkbox labeled "Create Parameters as a Transaction". Below the restriction section, there is an "Observations" section with a text area. At the bottom of the window, there is a "Class" dropdown set to "Expense" and two buttons labeled "Accept" and "Cancel".

DIALOG TO DEFINE FORMULA FOR "DELETEALL"  
TRANSACTION  
FIG. 13

09876413.000401  
FOR99 ET43/860

Close

Analysis Services Detachments Restrictions Agents Transactions Relations General Rules

Formula

Exchange > 0

Message De Erreur

Exchange must be greater than zero

Details

Check Modify Save

Date Time

Class: Expense

Accept Cancel

INTEGRITY CONSTRAINTS OF EXPENSE CLASS

FIG. 14



The value of the attribute "Cause" will be loaded with the value of the argument "p\_Cause" of the event "modify" when "modify" was executed.

Modelo Funcional

Clase: Expense Atributo: Cause

Evento: modify Efecto: p\_Cause Condición:

Aceptar Cancelar

Añadir Modificar Borrar

Categoría

☐ Cardinal ☒ De Estado ☐ De Situación

Detalles de Evaluación

Evento: modify

☐ Inferir para el resto de atributos

Condición de evaluación: IF:

Efecto del evento: p\_Cause

DIALOG BOX TO CREATE EVALUATION OF  
"CAUSE" ATTRIBUTE WITH THE  
"MODIFY" EVENT TO FORM PART OF  
FUNCTIONAL MODEL  
FIG. 15

Clase

Atributos Servicios Derivaciones Reducciones Agentes Transacciones Relaciones Generalidades

Clase servicio: Expense

Servicios

Servicio
newexpense
modify
close
authorize
rejectauth
DELETEALL

Agregar >>

<< Quitar

Quitar >>

Atributos

Atributos
Cause
AuthComments

Agregar >>

<< Quitar

Quitar >>

Clase AccountUser agente de

Servicio	Temporalidad
Expense.approve	No
Expense.rejectpayment	No
Expense.TPAY	No

Hacer temporal

No hacer temporal

Clase AccountUser base Validación sobre

Atributos
Expense.id_Expense
Expense.PresentDate
Expense.Status
Expense.PaymentDate
Expense.PayComments
Expense.AuthDate
Expense.TotalExpenses
Expense.TotalExpensesCus
Expense.Advances

Agregar >>

<< Quitar

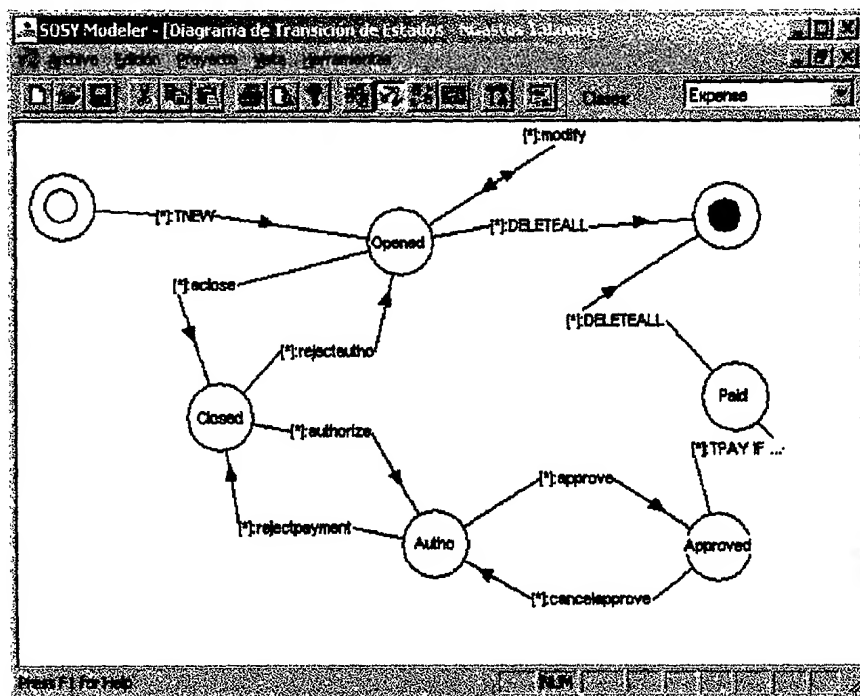
Quitar >>

Clase: AccountUser

Aceptar Cancelar

AGENT RELATIONSHIP DIALOG THAT CAN BE USED TO SET WHICH SERVICES "ACCOUNT USE" CAN ACCESS AND VISIBILITY OF CLASS ATTRIBUTES FOR THIS USER

R 16. 16



STATE TRANSITION DIAGRAM FOR CLASS "EXPENSE"

FIG. 17

101090" 64732850

According to last paragraph of Procedure, if the Advances are greater than total expenses, the system must force the confirmation of the account user. It is expressed as a precondition in the "TPAY" transaction. Next figure shows it.

The image shows a software dialog box titled "Transición". It contains several input fields and buttons. At the top right are "Aceptar" and "Cancelar" buttons. Below them are "Origen" (set to "Approved") and "Destino" (set to "Paid") dropdown menus. A "Servicio" dropdown is set to "TPAY". Under "Detalles" is a text area with "Anexo: 1/1" and "Superávit: 1/1". The "Precondición" section contains the text "Balance > 0 OR ps\_ReturnAdvance = TRUE". The "Condición de control" section is empty. The "Mensaje en caso de Error" section contains the text "Check the advanced money excess".

Transición	
Origen: <input type="text" value="Approved"/>	Destino: <input type="text" value="Paid"/>
<input type="button" value="Aceptar"/> <input type="button" value="Cancelar"/>	
Detalles:	Servicio: <input type="text" value="TPAY"/>
Anexo: 1/1 Superávit: 1/1	Precondición: Balance > 0 OR ps_ReturnAdvance = TRUE
	Condición de control:  
Mensaje en caso de Error: Check the advanced money excess	

DIALOG BOX TO MODEL PRECONDITION

FIG. 18

Conjunto de Visualización

Nombre:

Atributos a visualizar:  

Atributo	Tipo dato
Project.ProjectName	String
Employee.EmpName	String
Employee.EmpSur...	String
Status	Int
AuthoDate	Date
PaymentDate	Date
TotExpenses	Real
Balance	Real

Atributos:  

Atributo	Tipo dato
Cause	String
AuthoDate	Date
AuthoComments	String
PaymentDate	Date
PayComments	String
TotExpenses	Real
TotExpensesCur	Real
Advances	Real
AdvancesCur	Real
Exchange	Real
Balance	Real
BalanceCur	Real

Clase: Expense

DIALOG BOX USED BY SOSY MODELER  
TO ESTABLISH A SET OF ATTRIBUTES  
TO BE DISPLAYED FOR THE "EXPENSE" CLASS

FIG. 19

1010301-060101-2443-000000

**Filtro**

Filtro:  Alias:

Fórmula:

Observ:

**Variables**

Nombre	Alias	Tipo dato	Tipo estilo	Estilo	
vf_Project	Project	Project	Sel. Población		<input type="button" value="Nuevo"/> <input type="button" value="Modificar"/> <input type="button" value="Borrar"/>
vf_Employee	Employee	Employee	Sel. Población		
vf_DateIniIssue	Initial Issuing Date	Date			
vf_DateEndIssue	Final Issuing Date	Date			
vf_DateIniApp	Initial Approving D...	Date			

☐ Simple  
☐ Objetivado

Nombre:   
 Alias:   
 Tipo de dato:

Estilo de introducción:   
 Estilo de selección:

Clase:

DIALOG BOX USED BY SOSY MODELER  
 TO ESTABLISH THE SEARCHING CRITERIA  
 FOR THE EXPENSE CLASS AND TO ESTABLISH  
 THE FILTER FORMULA <sup>TO USE</sup> AND THE VARIABLES  
 TO REQUEST THE USER TO ENTER

FIG. 20

FLOWCHART OF THE FUNCTIONS THAT ALL SPECIES IN THE DOCUMENTATION  
GENERATOR TRANSLATOR SUBGENUS WILL PERFORM

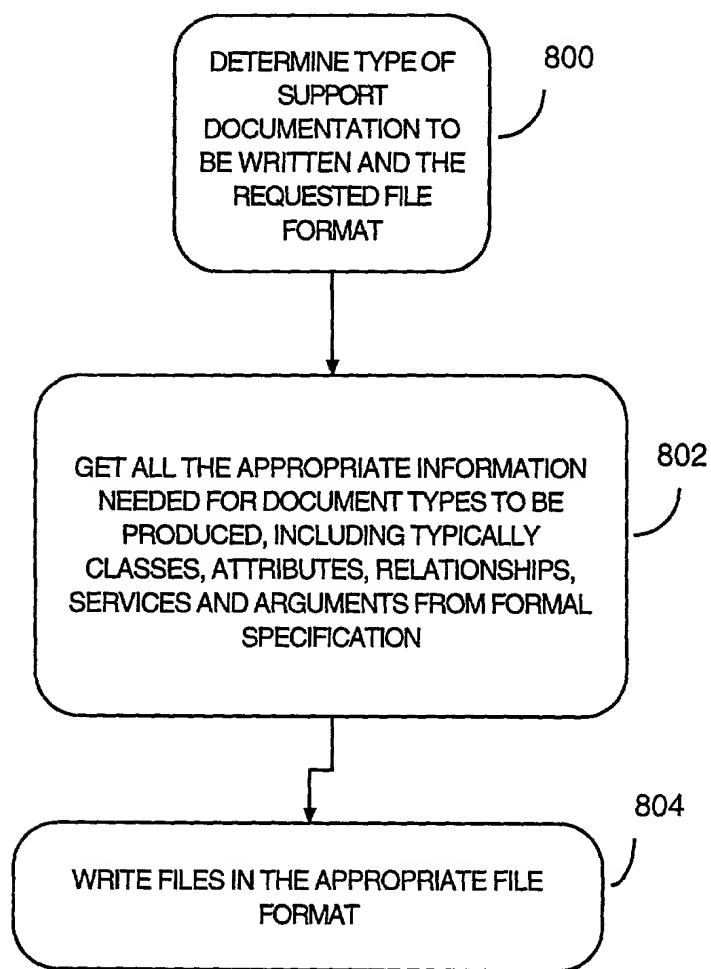


FIG. 21